Transportation
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Services

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Meeting Notes

Attendees: Homestead Dam Advisory Group (See List)
Stephanie Lindloff (NHDES)
Jim Turek (NOAA)
Bruce DiGennaro (KA)
Peter Walker (VHB)

Date/Time: May 13, 2004

Project No.: 51577.00

Place: Swanzey Town Hall

Re: Homestead Dam Feasibility Study

Notes taken by: Bruce DiGennaro
Peter Walker

Members of the Homestead Dam Advisory Group met for an initial discussion of the Homestead Dam Feasibility Study. Stephanie Lindloff (NHDES) began the meeting by providing a brief overview of the project. The feasibility study was commissioned by the NHDES in cooperation with the NH Fish and Game Department (NHF&G), the National Oceanic and Atmospheric Administration (NOAA), the US Fish and Wildlife Service (USFWS) and the Town of Swanzey. The current dam is unsafe and in need of repair or removal. The study aims to provide information to help make a decision on the fate of the dam. Stephanie reviewed the study's three main goals: 1) to attain dam safety, either through dam removal or dam repair, 2) to ensure the stability of the upstream Thompson Historic Covered Bridge, and 3) to restore fish movement past the site of the Homestead Dam, either through dam removal or installation of a fish passage device.

Stephanie Lindloff reviewed the purpose of the Advisory Group (AG), which was formed to provide input to the Feasibility Study team over the course of the study. The AG will provide a conduit for the distribution of study information to the community. The Advisory Group is not a decision-making body, but is expected to review and comment on study materials as well as help the study by providing a local perspective and technical information. The primary purposes of this first meeting were to familiarize the AG with the scope of work and schedule for completion for the study. The second meeting, scheduled for October, will provide detailed information generated during the study.

Stephanie also briefly reviewed some of the recent work on the dam issue. A public meeting was held in 2000 to introduce the idea of dam removal. At that meeting, members of the public raised many questions and concerns. Since that time, NHDES and others have worked with the USGS, NHDOT, and others to address some of these issues. Most notably, a detailed engineering study of the Thompson Covered Bridge was conducted by the NHDOT which will help address some of the questions related to the bridge. Stephanie then turned the floor over to Peter Walker, Project Manager for the consulting team.

Peter Walker provided an overview of the Feasibility Study. Peter stressed that the current meeting was not about providing answers – the study had really just begun. Rather, the consultant team

would like to share its approach to completing the study and make certain that all relevant issues are covered.

Peter displayed a map of the Ashuelot River watershed to put the location of the Homestead Dam in perspective. He noted that three dams on the mainstem of the river downstream of the Homestead Dam have already been removed, and work to remove or install fish passage on the three remaining dams is in progress. The USFWS and others have been working to restore rivers in the Connecticut River basin, of which the Ashuelot River is a direct tributary, for almost 40 years.

Peter summarized the main tasks associated with the Feasibility Study. First, the consulting team will review all existing available information. New studies will be conducted including a new dam inspection (it was last formally inspected by the NHDES in 1997), new topographic survey of the river and surroundings, new historical studies, and new computer modeling of the river. The study will review several alternatives for the dam, and will provide a full impact analysis and cost estimate associated with each option. Public involvement is also a main task for the Feasibility Study team, in recognition of the substantial public interest in the project.

The Feasibility Study will contain a detailed description of the purpose and need for the project, which is related both to the public safety problem posed by the dam as well as the benefit of fisheries and environmental restoration.

Peter outlined the several alternatives that are under consideration and which will be analyzed in the study:

- Alternative A - No action. He noted that this option is not truly feasible due to safety concerns.
- Alternative B1 - Repair the Dam and add a "denil fishway." This would involve construction of a concrete fish ladder, most likely on the eastern side of the dam.
- Alternative B2 – Repair the Dam and add a "bypass channel." It may be possible to create a new channel in the area of the former dam tailrace to allow fish to swim up and over the dam.
- Alternative B3 – Hydropower. This alternative would be used in combination with the denil ladder or bypass channel to help fund the required dam reconstruction and maintenance as well as the construction of the new fish passage. The Feasibility Study will review previous hydropower studies and report in general terms on the potential for implementing hydropower at this site.
- Alternative C – Full dam removal. This alternative is fairly self explanatory, and has clearly garnered the most attention. This would involve removing the entire dam structure in a controlled manner, and would result in the elimination of the river impoundment.

Peter reviewed some of the key target dates for the study. Surveys and studies will be conducted over the summer and early fall. A full public informational meeting is being organized for May 27. Progress reports will be issued to the Advisory Group in early June and late July. A dam inspection will be completed and a report issued in mid-August. A second scheduled meeting of the AG will be held in the fall – currently scheduled for September 16. On October 4, the study teams plans to hold a second full public meeting in early October, with the final feasibility study being issued in late October.

Peter then reviewed the specifics of some of the key issues associated with the study.

First, the safety of the Thompson Covered Bridge is in question. An existing engineering study had identified that scour is likely occurring at the bridge's center pier even with the dam in place. Therefore, the consulting team will refine computer models and will develop conceptual plans and cost estimates for the bridge.

Historical resources are also a major issue. The Thompson Bridge is listed on the National Register of Historic Places. The surrounding village of West Swanzey has been determined to be eligible for listing as an historic district. And, several archeological sites, including a Native American fish weir in the river itself, are present in the area. The consulting team has a team of architectural historians and archeologists who are studying these resources in coordination with the NH Division of Historical Resources.

One of the main tools that will come out of the study is a refined hydraulic model of the river. Peter reported that the Federal Emergency Management Agency had developed a computer model, known as a "HEC Model," to estimate flood hazard areas. The consulting team is developing more detailed topographic and hydrological information to refine this model. Eventually, the model (a "HEC-RAS" model) will be able to accurately predict water elevations and velocities in the river under various flow conditions. This information, in turn, will be used to help model the bridge scour issue, as well as predict sediment transport issues, hydrogeological changes (e.g., to wells), effects on upstream floodplain forests, and on the prehistoric fish weir.

Peter explained that the study will address potential impacts to groundwater conditions in the area. Impacts to residential wells on Spring Street and North Winchester Street will be considered during the study, as will fire fighting supplies. Peter noted that an existing municipal pump house is located on the east bank of the river just above the dam, while a pump house that pressurizes the Homestead Woolen Mills fire system (?) is located on the western bank. The Feasibility Study will also develop information to allow the public to visualize how the alternatives would affect visual resources and recreational resources.

Following Peter's presentation, Bruce DiGennaro facilitated discussion among the group. The issues and questions raised during this discussion are listed below, organized according to topic:

Environmental Benefits

- Richard Scaramelli asked for an explanation of the extent of the influence of Homestead Dam. What is the affected watershed area compared to other dams on the river?
- What's the value of removing the Homestead Dam? Why not remove Winchester Dam first?
- How cost effective is removal/restoration? What do we gain in terms of habitat?
- What is the quality/value of shad to the ecosystem?
- It was noted by one AG member that shad could generate a lot of anglers. Additionally, expanding herring will also benefit ecology and striped bass fishing along the Atlantic Coast.
- Another AG member noted that there are potential benefits to surrounding ecosystem, not just fish populations.
- Tom Warner questioned whether the Feasibility Study would be related to an overall plan for the river including upstream dams. He suggested that the study connect Homestead to other studies/plans.
- Removing this one dam will not result in a "rush of fish" — be realistic
- Are there fish in the impoundment that aren't found elsewhere?

Potential Adverse Effects

- One member wondered about sediment quality. Are there any contaminants? It was noted that the USFWS and EPA had previously sampled sediments and had not detected any contaminants.
- One AG member questioned what would happen to existing upstream habitat if the dam were removed?
- Could the fishing weir be an impediment for fish?
- What are the potential impacts on non-fish species?
- Impact of dam on downstream ice jams?

- Impacts on upstream meanders?

Dam Construction and Removal

- Dam Construction/Dam Breaching - how would it be done? A brief discussion of the potential removal construction sequence followed. This would take advantage of the existing stone causeway near the dam and might take about two weeks of work in the river.
- Was the channel modified when the dam was built?
- Will you go lower than the "natural" streambed when you remove the dam?

Natural Falls

- Tom Warner quoted from an Aspen Institute study that implied that a natural waterfall might once have existed in the dam location.
- An AG member suggested that a natural cascade be recreated, especially if that could be done with a series of structures of less than 4 ft tall (i.e., small than the state regulatory definition of a dam).
- Tom Warner requested a copy of geotechnical data for review.

Selectmen's Comments

- Bob Beauregard shared his comments on the issue. Mr. Beauregard explained that the river is a treasure to Swanzey. Noting that the decision will help to shape the future of the community, he suggested that the study look to achieve a win-win situation.
- Mr. Beauregard noted that there will be trade-offs – the situation is a complex challenge with many variables. But this represents an opportunity to do a good job.

Decision Making

- Sara Carboneau suggested that the team be clear about how the decision will be made.
- Need to explain that there won't be a Town vote, unless the Town is going to buy the dam.
- The public need to understand what they have control over.
- Tom Warner stressed that the team needs to carefully present the facts and involve public as early as possible and to have data and studies available.
- The study team needs to be clear that fish passage must be included in any solution.

Other Comments

- The study should consider WWTP outflow. How has/will water quality change?
- Study needs to consider recent Master Plan update, which suggests that the Town look at hydro, and that the fate of the dam support local uses and economic potential.
- One member wondered whether the Konover Project in Keene would affect the river since it impacts upstream floodplain.
- Another member wondered whether the historical survey will use ground penetrating radar.